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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,357	06/23/2005	Kung-Won Nam	29347/50784	3488

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MARSHALL, GERSTEIN & BORUN LLP
233 S. WACKER DRIVE, SUITE 6300
SEARS TOWER
CHICAGO, IL 60606

EXAMINER	
MCGUTHRY BANKS, TIMA MICHELE	
ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
12/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,357	NAM ET AL.	
	Examiner	Art Unit	
	TIMA M. MCGUTHRY-BANKS	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/9/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claim 1 is currently amended, Claims 2-8 are as previously presented and Claims 9-15 are cancelled.

Allowable Subject Matter

The indicated allowability of claims 4, 6 and 7 is withdrawn in view of the newly discovered reference(s) to Kepplinger et al. Rejections based on the newly cited reference(s) follow.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9 October 2008 has been entered.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kepplinger et al (US 5,584,910).

Kepplinger et al is applied as described in the office action mailed 9 July 2008. Further regarding the limitation of "a portion of," Kepplinger et al teaches that the partially oxidized reducing gas emerging form the reduction cyclone 8 via the gas duct 30 gets into the fluidized-layer preheating reactor 1, *wherein however, part of the same is burnt for heating the reducing gas in a combustion chamber 34* (emphasis added) (column 5, lines 42-54). This teaching reads on drying the iron ores or the additives by using a portion of branched exhaust gas as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kepplinger et al as applied to claim 1 above, and further in view of JP 61288004.

Kepplinger et al discloses the invention substantially as claimed. However, Kepplinger et al does not disclose that an amount of branched exhaust gas is 20-40% of an amount of exhaust gas exhausted from the fluidized bed. JP '004 teaches a utilizing method for converter waste gas. Stored gas is introduced into a fluidized bed and part of the gas is partially burned to increase the temperature of the gas to a prescribed temperature (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the amount of gas not burned in Kepplinger et al could be within the claimed range, since the amount of gas burned is a result effective variable to get a prescribed temperature. Since a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation; therefore a *prima facie* case of obviousness exists. See MPEP § 2144.05 II B.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kepplinger et al as applied to claims 1 and 5 above, and further in view of Brusov et al (US 3,876,419).

Kepplinger et al discloses the invention substantially as claimed. However, Kepplinger et al does not disclose the flow rate of the exhaust gas in the case where iron ores are conveyed.

Brusov et al teaches thermal and chemical treatment of solids. The velocity of the flow gas for conveying solids is 30-50 m/sec (column 6, lines 38 and 39). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the flow rate in Kepplinger et al would be as taught by Brusov et al, since Brusov et al teaches metallization of iron ores (column 6, lines 35 and 36).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kepplinger et al as applied to claims 1 and 5 above, and further in view of Kanetsuna et al (US 5,229,064).

Kepplinger et al discloses the invention substantially as claimed. However, Kepplinger et al does not disclose the flow rate of the exhaust gas in the case where additives are conveyed. Kanetsuna et al teaches a fluidized bed type preliminary reducing furnace for oxide raw material (title). The fine granular raw material is fluidized by a reductive gas flowing at a velocity of 2-10 m/s (column 1, lines 33-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the gas flow rate in Kepplinger et al would be as taught by Kanetsuna et al, since Kanetsuna et al teaches that in order to carry out a preliminary reducing reaction uniformly and efficiently, the fine or granular raw material and the reductive gas supplied need to be sufficiently dispensed and mixed (column 1, lines 40-44). Additionally, in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists. See MPEP § 2144.05.

Response to Arguments

Applicant's summary of the interview with the examiner is correct. Upon further examination, the examiner has re-applied the reference to Kepplinger et al as described above.

Though Kepplinger et al does not specifically show a portion, which implies more than one branched exhaust gas, the teaching of "part of the same is burnt for heating" reads on not all of the reducing gas withdrawn ends up in the same condition in the preheating reactor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMA M. MCGUTHRY-BANKS whose telephone number is (571)272-2744. The examiner can normally be reached on M-F 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/T. M. M./

Examiner, Art Unit 1793
11 December 2008